

**Claims**

1. A process for preparing a polymeric hydroperoxide  
5 which in a redox reaction forms free-radical  
polymer but no low molecular weight free radical,  
characterized in that a synthetic polymer  
comprising at least one tertiary hydroxyl group or  
olefin function is reacted with concentrated  
10 hydrogen peroxide and a concentrated mineral acid.
2. The process as claimed in claim 1, characterized  
in that  $H_2O_2$  having a concentration of from 50 to  
70% is used.  
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3. The process as claimed in claim 1 or 2,  
characterized in that sulfuric acid having a  
concentration of from 50 to 80% is used as  
concentrated mineral acid.  
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4. The process as claimed in any of the preceding  
claims, characterized in that the polymer is used  
as a solution in an organic solvent.
- 25 5. The process as claimed in any of the preceding  
claims, characterized in that a polysiloxane  
polyol, polyether polyol or polyester polyol is  
used as starting material.
- 30 6. The process as claimed in any of the preceding  
claims, characterized in that the reaction is  
carried out at a temperature of from +10 to +60°C.

## Claims

1. A process for preparing a polymeric hydroperoxide  
5 which in a redox reaction forms free-radical  
polymer but no low molecular weight free radical,  
characterized in that a synthetic polymer which  
comprises at least one tertiary hydroxyl group or  
olefin function and has no further groups which  
10 are reactive toward the peroxidation reagent used  
is introduced into a mixture of concentrated  
hydrogen peroxide and a concentrated mineral acid.
7. The process as claimed in any of the preceding  
15 claims, characterized in that a polysiloxane  
polyol dissolved in a lower alcohol is used.
8. A process for preparing copolymers by redox  
polymerization using a peroxidic polymerization  
20 initiator, characterized in that, to avoid  
formation of homopolymers, a hydroperoxide  
prepared by adding a synthetic polymer which  
comprises at least one tertiary hydroxyl group or  
olefin function and has no further groups which  
25 are reactive toward the peroxidation reagent used  
to a mixture of concentrated hydrogen peroxide and  
a concentrated mineral acid is used as redox  
polymerization initiator and the copolymerization  
is carried out at a temperature below 90°C.  
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9. The process as claimed in claim 8, characterized  
in that the polymer is used as a solution in an  
organic solvent.
- 35 10. The process as claimed in claim 8 or 9,  
characterized in that a polyether polyol,  
polyester polyol or polysiloxane polyol is used as  
starting material.